recalled to England to succeed Tyndall at the Queenwood College, Hampshire, and remained there for three years; and in 1854 he married Anna, youngest daughter of Samuel Martin, Esq., of Loughorne, County Down, Ireland; but the delicate health of his wife necessitated a visit to the South of France during the winter of 1856-7, which was unfortunately unavailing, for Mrs. Hirst died on the return journey in Paris. Dr. Hirst then spent two years abroad, attending the lectures of eminent mathematicians (Chasles, Liouville, Lamé, Bertrand), and writing several memoirs. Early in 1860 he unexpectedly found employment in University College School, of which he was made head master on the death of Mr. Cook. It was during his five years' tenure of this appointment that he made experiments on teaching geometry apart from "Euclid"; and he was one of the founders (in 1871) of the Association for the Improvement of Geometrical Teaching, and its president for the first seven years. In 1865 Dr. Hirst was appointed Professor of Mathematical Physics in University College, London, and in 1867 Professor of Mathematics, in succession to De Morgan. In 1870 he accepted the newly-created appointment of Assistant Registrar in the University of London, in consequence of which he resigned not only his professorship, but his general secretaryship of the British Association, which he had held for four years. Early in 1873, when the Royal Naval College was founded at Greenwich, Dr. Hirst was appointed Director of Studies, which position he occupied until 1883, when ill-health compelled him to resign it, and pass much of his time abroad. He died on 1892 February 16.

Dr. Hirst was one of the original members of the London Mathematical Society (1861); was on its council 1864–1883; was treasurer for several years, and president 1872–1874. He was elected a Fellow of the Royal Astronomical Society in 1866, but never contributed any papers to the Society. He was elected Fellow of the Royal Society in 1861, was three times a member of its council, and twice one of its vice-presidents; and in 1883 he was awarded a Royal Medal. He was also a member of several other learned societies, British and foreign. His scientific work was chiefly confined to pure mathematics, and the excellence of its quality will be gathered from the uniform success which marked his career. Among his more important papers are those "On Equally Attracting Bodies" (*Phil. Trans.* 1857–8); "On Ripples and their Relation to the Velocity of Currents" (*Phil. Mag.*, 1861); "On the Volumes of Pedal Surfaces" (*Phil. Trans.*, 1863); "On the Quadric Inversion of Plane Curves" (*Proc. R.S.*, 1865); and many in the *Proceedings of the Mathematical Society*, 1869–90.

Joseph Kleiber, second son of Henry Kleiber, was born at St. Petersburg on 1863 December 15. He graduated at St. Petersburg University, and while privat-docent delivered lectures on "The Application of Mathematics to Social Phenomena," and

"The Theory of Probabilities." His studies were mainly directed towards astronomy, and he was with Professors Tacchini and Ricco on the river Viatka to observe the total solar eclipse of 1887 August 19. He completed his Russian degree in 1888 by a thesis on "The Method of Smoothing Series of Observations," but his studies having created in him a desire to learn something more of Cambridge mathematics, he came over to England in June 1888, and spent a year in Cambridge. There are many who will long remember this visit of a young Russian enthusiast, attracted from so far by the fame of their university, who worked with the might of a mathematical Hercules. He wrote a sketch of Cambridge life in the *European Messenger* (a Russian review). He returned to St. Petersburg in the autumn of 1889, and was married on October 6. He resumed lecturing at the St. Petersburg University, on the method of least squares and the theory of gravitation; but the symptoms of the fatal disease from which he died had already appeared. He became seriously ill in May 1891, and died from phthisis, at Nice, on 1892 February 12.

In his short scientific life he wrote thirty-two papers, two of which have been published since his death. Eleven of these deal with meteors and shooting stars, the most important being the "Catalogue of 918 Orbits of Meteor Streams from the Observations of Mr. W. F. Denning" (*Monthly Notices*, vol. li. No. 1), and the posthumous paper "On the Displacement of Radiants by the Attraction and Motions of the Earth" (*Monthly Notices*, vol. lii. No. 5). Eleven papers deal with probabilities and statistics in their application to astronomy and meteorology, one or two are on pure mathematics, and one or two on miscellaneous subjects.

He was elected a Fellow of the Society on 1889 December 13.

THOMAS LEE was born in the parish of Galston in the year 1818, and first came to Kilmarnock, which he afterwards made his home, as a boy of fourteen, to fill the post of commercial clerk. Four years later he went to London, where he still continued to be engaged in commercial pursuits. After visiting Paris and other cities he returned to Kilmarnock, and took up the profession of tuition, his first school being in Queen Street. When the appointment of mathematical and commercial master in the Kilmarnock Academy became vacant, the success and reputation Lee had already attained as a teacher caused him to be selected from a large number of candidates—a selection which his future career abundantly justified. He by no means confined his instructions to his pupils to their preparation for a business life, a work in which he was very successful, but took a great interest in training many of them in the higher branches of mathematics and astronomy, and secured for them more than a rudimentary knowledge of those sciences. He was greatly assisted in his astronomical teaching by the erection of the observatory in Morton Place, which was provided with two good reflecting telescopes and other astronomical instruments. This